

REMARKS/ARGUMENTS

Favorable reconsider of this application, in light of the present amendment and following discussion, is respectfully requested.

Claims 1-5, 8, 10-18, 20-24 and 35-41 are pending in the present application. Claims 1, 4-5, 8, 10-18, 20, and 24 are amended. Claims 6-7, 9, 19, and 25-34 are canceled. Claims 35-41 are newly added. Support for the amendments to Claims 1 and 24 can be found in now-canceled Claim 19 and in the specification as published at least at paragraph [0118]. Support for the amendments to Claims 4-5, 8, 10-18 and 20 is self-evident. Support for newly added Claims 35-36 can be found in the specification as published at least at paragraph [0130] and in Figure 18. Support for newly added Claims 37-38 can be found in the specification as published at least at paragraph [0129] and in Figure 17. Support for newly added Claim 39 can be found in the specification as published at least at paragraph [0120]. Support for newly added Claims 40-41 can be found in the specification as published at least at paragraph [0125]. Thus, no new matter is added.

The outstanding Office Action rejected Claims 1-5, 10-17, 19-20 and 24 under 35 U.S.C. § 103(a) as unpatentable over Young et al. (U.S. Patent No. 2003/0226806 herein “Young”) in view of Giddings (U.S. Patent No. 4,894,146). The outstanding Office Action rejected Claims 8, 18, and 21-23 under 35 U.S.C. § 103(a) as unpatentable over Young in view of Giddings and further in view of Christel et al. (U.S. Patent No. 6,368,871, herein “Christel”). The outstanding Office Action rejected Claims 1, 3-4, 8, 12-14, 17-19, and 21-24 under 35 U.S.C. § 103(a) as unpatentable over Christel in view of Giddings.

At the outset, Applicants note with appreciation the courtesy of a personal interview granted to Applicants’ representative by Primary Examiner Jennifer Leung. In combination with the interview summary provided by Primary Examiner Leung, the substance of the personal interview is substantially summarized below in accordance with MPEP § 713.04.

Applicants respectfully traverse the rejection of Claims 1-5, 10-17, 19-20, and 24 under 35 U.S.C. § 103(a) as unpatentable over Young in view of Giddings.

Amended independent Claims 1 and 24, both recite, in part:

first and second inlet channels communicated with the first and second inlet ports, respectively, wherein a fluid containing a catalyst flows from the first inlet port to the first inlet channel...

a circulating channel configured to feed the fluid containing a catalyst discharged from the first outlet port to the first inlet port

Thus, a fluid containing a catalyst flows from the first inlet port to the first inlet channel in the fine channel device. Furthermore, the fine channel device includes a circulating channel configured to feed the fluid containing a catalyst from the first outlet port to the first inlet port. One non-limiting example of the above-noted feature is shown in Figure 13(a). As discussed in the personal interview, one benefit of the above-noted feature is that the fluid containing a catalyst circulating through the fine channel device during a chemical reaction may be separated and recovered for reuse in subsequent chemical reactions.

Turning now to the cited art, Young is silent regarding a fluid containing a catalyst. In fact, Young is silent regarding chemical reactions. As discussed in the personal interview, the fluid extraction device described in Young is directed towards separating fluids.¹ In contrast, the fine channel device recited in amended independent Claims 1 and 24 may be used to perform chemical reactions, including multiphase type catalytic reactions.²

Furthermore, Young fails to describe a circulating channel configured to feed a fluid from the first outlet port to the first inlet port. In fact, the outstanding Office Action acknowledges that Young is silent regarding a circulating channel.³ Instead, the outstanding

¹ See Young at paragraph [0014].

² See published application at paragraph [0116].

³ See outstanding Office Action at page 8.

Office Action takes Official Notice that the above-noted feature is within the level of ordinary skill in the art, but does not provide any documentation to support this assertion.

Official Notice should be taken only for facts readily available, and documentation should be provided for Official Notice when Official Notice is asserted to provide entire features of claims. Accordingly, Applicants respectfully request that the Examiner provide documentation such as an affidavit or declaration in the next Official Action should Official Notice be maintained in asserting that the recited combination of a fine channel device and a circulating channel configured to feed fluid from the first outlet port to the first inlet port as recited in amended independent Claims 1 and 24 is well-known.

Furthermore, Applicants respectfully submit that the recited combination of a fine channel device and the circulating channel configured to feed fluid from the first outlet to the first inlet port is not well known in the art. It is unreasonable to substitute Official Notice for documentary evidence of the recited features. In other words, such expansion of referenced teachings using unfounded assumptions and/or speculation cannot be substituted for actual reference teaching. *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967) (“The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis.”). Thus, withdrawal of the Official Notice taken in the outstanding Office Action is respectfully requested.

Giddings fails to remedy the deficiencies discussed above in Young. Instead, Giddings is silent regarding a fluid containing a catalyst. As discussed in the personal interview, Giddings is silent regarding chemical reactions, as the apparatus described in Giddings is directed towards particle fractionation.⁴ Furthermore, Giddings is silent

⁴ See Giddings at column 1, lines 12-13.

regarding a circulating channel configured to feed a fluid from the first outlet port to the first inlet port, much less a circulating channel configured to feed a fluid containing a catalyst.

Accordingly, no reasonable combination of Young and Giddings would include all the features recited in amended independent Claims 1 and 24, or claims depending therefrom. Therefore, Applicants respectfully request the rejection of Claims 1-5, 10-17, 19-20 and 24 be withdrawn.

In addition, Applicants respectfully traverse the rejection of Claims 8, 18, and 21-23 under 35 U.S.C. § 103(a) as unpatentable over Young in view of Giddings and further in view of Christel.

As discussed above, no reasonable combination of Young and Giddings would include all the features recited in amended independent Claims 1 and 24.

Christel fails to remedy the deficiencies discussed above in Young and Giddings. Instead, Christel is silent regarding a fluid containing a catalyst. As discussed in the personal interview, Christel is silent regarding chemical reactions, as the apparatus described in Christel is directed towards the manipulation of materials, including macromolecules, and fluid samples.⁵ Furthermore, Christel is silent regarding a circulating channel configured to feed a fluid from the first outlet port to the first inlet port, much less a circulating channel configured to feed a fluid containing a catalyst.

Accordingly, no reasonable combination of Young, Giddings, and Christel would include all the features recited in amended independent Claims 1 and 24, or claims depending therefrom. Therefore, Applicants respectfully request the rejections of Claims 8, 18, and 21-23 be withdrawn.

In addition, Applicants respectfully traverse the rejection of Claims 1, 3-4, 8, 12-14, 17-19 and 21-24 under 35 U.S.C. § 103(a) as unpatentable over Christel in view of Giddings.

⁵ See Christel at column 1, lines 61-64.

As discussed above, no reasonable combination of Christel and Giddings would include all the features recited in amended independent Claims 1 and 24, or claims depending therefrom. Accordingly, Applicants respectfully request the rejection of Claims 1, 3-4, 8, 12-14, 17-19 and 21-24 be withdrawn.

Newly added dependent Claims 35-41 each depend, directly or indirectly, from amended independent Claim 1, and patentably distinguish over the cited references for at least the same reasons that amended independent Claim 1 does.

Applicants wish to make further remarks regarding Claims 35-36, which recite a light irradiation device. As discussed in the personal interview, none of the cited references describes a light irradiation device. Thus, Claims 35-36 further patentably distinguish over any proper combination of the cited references.

Applicants also wish to make further remarks regarding Claim 38, which recites a heating device disposed at an upstream side of the fine channel and a heat insulation material embedded in the fine channel device at a downstream side of the fine channel. As discussed in the personal interview, none of the cited references describes a heat insulation material embedded in the fine channel device at a downstream side of the fine channel. Thus, Claim 38 further patentably distinguishes over any proper combination of the cited references.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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